

## CHAPTER 8

# Trade Management

*Choices are the hinges of destiny.*

—Pythagoras

**T**rade management is what you do after you get into the trade. These decisions are complicated because they deal both with mathematical realities and with trader psychology. One thing that you'll often hear is that it's your responsibility, as the trader, to find your own right way to trade. The implication is that basically anything works; you just have to make some choices from the giant menu of possibilities, experiment until they feel right, and then stick with them. There is some truth here, in that any rule set must be matched to the trader's personality and psychological makeup, but there is also a very important point that goes unsaid: it is exceedingly difficult to find an edge in the market. You must understand the impact of every decision and every adjustment.

Consider the simple case of a specific trading pattern that has an edge in predicting a small directional movement over the next few bars. Traders A and B decide to trade this pattern, but they both realize the importance of adapting it to their personalities. Let's simplify the problem they face, and consider only the choices in exiting at a profit and exiting at a loss, and furthermore restrict the options for those two conditions to "large" and "small." If we were trading our theoretical random walk market, these choices would not matter because the probability of winning would adjust to maintain zero expectancy (remember, no edge is ever possible in a random walk market), but the situation is different if the trading signal actually has predictive value in real markets—trading signals that have predictive value generally see that value limited to a specific time horizon and magnitude. This is fairly intuitive. No one would expect a signal on an intraday time frame to reliably have an impact many months out. In this theoretical example, assume that the signal is good for only a few bars following the entry.

Trader A finds that a combination of a rather wide stop and a fairly tight profit target works for him in trading this pattern. The losses are infrequent but large, and he appreciates the psychological reinforcement of having long strings of winners, so this strategy works for him. Trader B knows from past experience with other patterns that she has a different approach to trading. She prefers to have a few large winners, and doesn't care so much about having a high win rate. She is perfectly comfortable sitting through many small losses, knowing that the gains from the large but infrequent wins will more than cover those losses. However, she is about to make a serious mistake. Though this approach has worked well for her with other types of systems (e.g., longer-term trend following), the signal under consideration in this example has predictive value for only a few bars. If she tries to squeeze large profits out of this pattern by setting a large profit target, it is unlikely to work because the signal has no power that far out; the market degenerates into random noise a few bars after each occurrence of the signal—the profit target must respect this reality.

Many traders struggle because they do not understand that these choices matter. They wrongly assume that they can make any decision regarding stop, target, and position management, and, as long as they follow a disciplined plan, they will make money. You must understand the nature of the patterns you are trading. Some, like the pattern in this example, require very close targets and would allow for discretion on the stop. Others might require both large stops and large targets. Consider the case of a long-term signal that has predictive value many weeks to months after the signal event, but is essentially random in the time period immediately following the signal. A tight stop or target would be hit in this random noise. In addition, markets do have a baseline level of random noise on any time frame. Stops must be set outside that noise level or they will be hit by normal, random fluctuations. In most trading methods, there is a fairly small sweet spot or combination of parameters across which the system will be profitable. If you tinker with or change any part, there may be unintended consequences. Systems can and should be adapted for each trader, but this work requires careful thought and testing; it cannot be done haphazardly.

## **PLACING THE INITIAL STOP**

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The placement of the initial stop is very important. First, it sets the ultimate risk point on the trade and so removes much of the emotion from the trade process. This point is also important because many traders will use this risk to set the trade size in a risk management/position sizing plan (see Chapter 9). From the outset, consider that there is an unavoidable trade-off between near and far stops. Closer stops allow larger positions, which, of course, means larger profits on winning trades, while farther stops will result in a higher probability of a win on a smaller position size. All of this is fairly intuitive, but it leaves an important question unanswered: where do we actually place these stops? There is no one right answer, but here are several common solutions to the problem, some better than others.

## Fixed-Percentage Stops

Old-school stock traders, in particular, tend to do this: simply get into a position and give it 10 percent or 20 percent price movement against you. There is one good thing to say about this approach: it does define a fixed and clear hard loss limit. It is far better to have one, even if it is a not very well-thought-out level, than to have none at all. However, using the same fixed percentage across different markets is not optimal. Most importantly, different markets trade with very different volatility levels. For instance, most actively traded stocks trade with an average daily range that is a little under 3 percent of their stock price (based on 500 active stocks as of April 1, 2011), but many have a much larger average range that is 9 percent or more of their underlying price. Using a 10 percent stop on two markets, one with 9 percent average daily range and one with 3 percent average daily range, will give very different results; for the first market, a 10 percent stop is within the potential noise level of a single trading day so probably does not represent an intelligent stop point. Using a fixed-percentage stop is better than no stop at all, but not that much better.

## Volatility-Based Stops

A simple refinement would be to use a percentage stop that is based on some measure of the market's volatility. For instance, a trader might use a stop that was  $N$  times a market's average daily range, or  $N$  times a single-day one standard deviation move. Stops for volatile markets will naturally be much farther away from the entry price, so position sizes will be smaller in volatile markets; stops calculated in this way automatically respect the natural swings of each individual market. These can be useful stops for discretionary traders, and often are ideal initial stops for algorithmic trading systems.

## Market Structure

A third approach is to set the stops based on the structure of the market itself. This is definitely an art, and it can be difficult to learn, especially for the newer trader. It is not possible to reduce this to a set of simple rules, but here are some guidelines:

- The stop placement is determined by the location of pivot points. If entering a position with the short-term momentum, you do not want to see the market take out the closest pivot low (the solid straight line in Figure 8.1). It is also possible to step back to the penultimate pivot in many cases (the dotted line stop in Figure 8.1), but with the trade-off of a much smaller position size.
- In general, it usually makes sense to set fairly wide initial stops. As a rough guideline, it would be very unusual to set an initial stop that is less than two Average True Ranges (ATRs) from the current price, and the initial stop may sometimes be more than four ATRs away from the current price. (You may choose to actually calculate



**FIGURE 8.1** Two Stop Levels for a Long Position Entered on the Last Candle of the Chart

the ATR, but it is also possible to judge it from a visual inspection of the chart for this purpose.)

- If buying against a sloppy support area with many shadows below, the only stop that makes sense is beyond the most extreme low. Furthermore, it is entirely possible that the stop will be hit on a drop to an even more extreme low. If this happens and you are stopped out of the position on a fakeout, it is necessary to rebuy with a new stop beyond the new, lowest extreme.
- In practice, if you are concerned about the particular market for some reason—for instance, an impending report or something else that could generate excessive volatility—you may want to have smaller size on the trade. One way to accomplish this is to set the initial stop farther away. This is a tool to be used only in rare, extreme cases.

There are many examples of my initial stops and subsequent trade management decisions in Chapter 10. In addition, the trade templates in Chapter 6 also feature discussions on initial stop placement for each of those patterns. These are specific examples, but the principles can be adapted to your own personality and your own trading style. The most



important thing is that every trade, without exception, has a precise initial risk point defined at the time of entry. In other words, you always know where you are getting out if you are wrong, and you must always respect that level.

## SETTING PRICE TARGETS

To set or not to set price targets, that is the question. Many traders prefer to not set price targets in an effort to follow the maxim “let your winners run.” Other traders make the cogent argument that fixed profit targets are easy to test in the context of a trading system, and that smaller profits can be taken with a degree of regularity. Compared to the multiple trade management decisions that may go into an open-ended trade, it is relatively easy to quantify and test a system with fixed profit targets and fixed stops, and such a system may be amenable to an optimized sizing strategy. There is value in both of these perspectives, and some traders even combine the two by taking partial profits at a set target and holding the remainder of the position for a larger move.

In general, there are two approaches to getting out of profitable trades: with or against the trend of the trade. With-trend exits (i.e., selling into strength or covering into weakness) are usually done via limit orders and are often done at preset targets. Countertrend exits are usually done after some kind of give-back rule is activated and the trade has retreated from its maximum profit point. Let’s consider a few variations of profit-taking strategies.

### Fixed Profits at Risk Multiples

If the initial risk is always known at the time of trade entry, we can use multiples of that risk for profit targets. This is my personal approach: I usually exit between 25 and 33 percent of the position on a limit order at a profit equal to my initial risk in the trade. For instance, if I am buying a \$50 stock with a \$45 stop and my position sizing rules have me buying 10,000 shares, I will offer out between 2,500 and 3,000 of those shares at \$55. As a matter of discipline, this order is entered as soon as the entry order is filled, and is left working *good till canceled (GTC)* in all sessions. From a practical standpoint, you usually do not want to work *stop orders* in premarket and postmarket hours, as they can be hit by strange off-market orders in those illiquid environments, but this is actually a *benefit* to your profit-taking orders. As much as possible, you want these profit-taking limit orders to be working in overnight, thin markets, because sometimes other traders will make mistakes and you should be happy to provide liquidity to them at these spots.

In addition, orders are prioritized in most electronic trading books in the order in which they are received. If there are 25,000 shares bid at a price and you join the bid for 500 shares, you will not be filled until 25,500 shares print at that price. However, modern order books have a tremendous amount of cancel-and-replace activity due to the presence of high-frequency electronic trading algorithms. Most of those 25,000 shares

might be canceled and replaced thousands of times each minute. If you put a real order into the book (one that you do not intend to cancel), it will percolate to the top of queue as other orders are canceled and replaced. This is why it is so important to get your orders in as soon as possible. Even with daytrades, you will often find yourself filled first at prices if your orders have been in the book awhile—it is completely possible that 1,000 shares print at the high of the day, and all 1,000 of them will be yours if your order has been in the book for a couple of hours.

This concept can be extended to taking profits at two or three times your initial risk. This is very much a matter of personal preference, but I also make it a point to be down to between one-third to half my initial size at two times my initial risk, and then manage the remainder according to a different set of rules. Whatever you decide to do, first test it over a large set of trades to make sure it makes sense and that it works with your market selection and entry criteria. Once you have settled on a plan, be consistent. You may have multiple rules and qualifying conditions, but, within those rules, you must be absolutely, perfectly consistent. The market is random enough; don't make your results more volatile by adding random decisions to your process.

## Market Structure Targets

A good argument can be made for putting profit targets at visible points in the market. You should generally assume that your limit order will have to be traded through to be filled. In other words, a limit to sell at \$10.00 will certainly not be filled if the highest price is \$9.99, and, in backtesting, you should assume it will not be filled even if a lot of volume trades at \$10.00. However, in most electronic markets, you are guaranteed to be filled if price trades to \$10.01, as this cannot happen until all liquidity (including your limit order) is taken at \$10.00. Because of this, it makes sense to place your limits slightly inside the actual point in the market; if there is clearly visible support at \$10.00 and resistance at \$20.00, you would place a limit to buy above \$10.00 (perhaps between \$10.01 and \$10.15, depending on the market and your time frame) and a limit to sell somewhere below \$20.00. If you are a daytrader looking to take profits at the high of the day, your profit-taking order should be a few cents or ticks below the high. It rarely makes sense to put your orders on the other side of a visible chart point, unless you are counting on extra volatility from stop orders being hit in those areas. This is an obvious but often-overlooked point, and is something to consider if you tend to trade around those chart patterns.

It is not possible to create a comprehensive list of every chart structure that may provide a reasonable profit target, nor is it necessary to do so. Many are obvious: visible support or resistance; visible support or resistance on a higher time frame; big highs and lows like important 52-week highs and lows for stocks or contract highs and lows for commodities; high and low of the session for intraday trades; long shadows of accumulation below ranges or distribution above; and so on. In most cases, it is enough to be aware of the market structure as delineated by the pivot highs and lows of the swings. Don't over think. If you normally take profits at risk multiples and find yourself

entering an order to buy or sell beyond one of these visible points, it probably makes sense to tighten the orders up a little bit and bring them inside the swings. This will slightly reduce your profit (though, theoretically, the probability shift will compensate), but there is no sense learning to read market structure if you don't make good use of the information it is giving you.

## Trailing Stops

Many traders use some type of trailing stop approach to winning trades. Though there are many variations on this concept, they all define stop levels that move with the trade according to some rule set. They may adjust very infrequently according to simple rules. For instance, a trader taking profits at  $1\times$  the initial risk on the trade might then move the stop for the remainder of the position to a higher price, effectively locking in a profit on the trade. There are also many more complex, algorithmic rules for trailing stops that adapt to market conditions as the trade develops. Let's look at some variations of these rules.

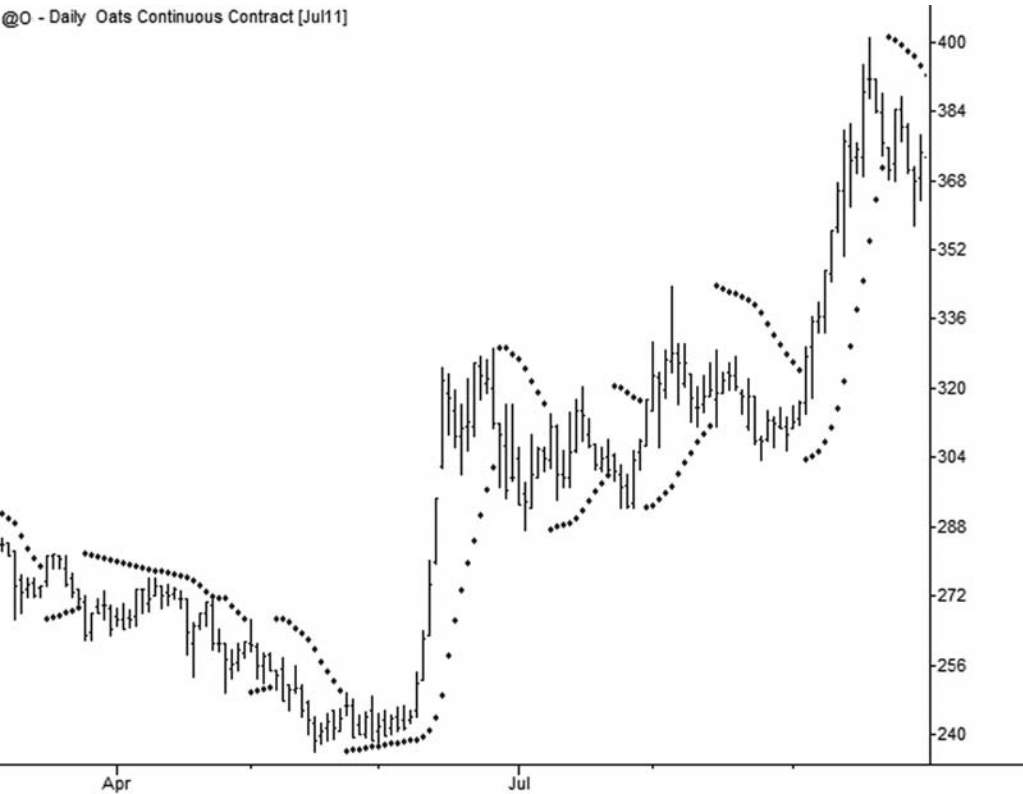
**Moving Averages and Trend Lines** Many traders will get into a trending trade and will then stop out when price touches or, in some cases, closes below a moving average. Traders often use 100-, 50-, or 20-period moving averages, but we have to ask: why not 103, 98, 49, or 17 periods? Why not 53? The choice of which moving average to use is arbitrary, and so the moving averages in general are arbitrary. Using a moving average for a stop is better than having no plan at all, but moving averages usually make poor choices for stop levels.

Another commonly used plan is a stop below an important trend line. There is some logic to this idea, but there are also some serious flaws. First, trend lines are unavoidably arbitrary; two traders will often draw two different trend lines on the same chart. This in itself does not compromise the validity of the tool, but the bigger problem is that trend lines are not suitable stop levels. It is extremely common to see a good trend line violated, and then to see price immediately recover. Some of the best entries into patterns occur when these trend line breaks are reversed, so why choose a stop plan that puts you on the wrong side of that tendency? If you want to use a trend line as a trailing stop, it might make sense to require significant price action under the trend line. How you define significant price action is up to you: multiple closes, consolidation under, multiple legs under, are all possibilities, but they all require price movement and leave the position open to larger losses. Again, there are better tools for trailing stops.

**Wilder's Parabolic SAR and LeBeau's Chandelier Stop** Welles Wilder created a trading system he called *Parabolic Stop and Reverse (SAR)* in his 1978 *New Concepts in Technical Trading Systems*. The Parabolic, as it is usually called, was originally intended to be a complete trading system designed to keep traders always in the market, flipping their bias from long to short as the trend changed. It works by identifying the most extreme trend point (highest point in an uptrend or lowest point in a downtrend),

and then placing a stop a certain distance from that extreme point. Each day, the stop is moved closer to that extreme point by an amount called the *acceleration factor*; this factor also increases every day so the stop is ratcheted in at an ever-increasing rate. If the market trends strongly, the Parabolic stop level will trail behind, but if the market reverses or goes flat, the acceleration factor will usually force a trend change indication very quickly. Originally, if this stop level was reached, the trend was deemed to have changed and you were also supposed to flip your position. Figure 8.2 shows an example of the Parabolic applied to a continuous chart of oat futures.

Though it is difficult to trade the Parabolic as a stand-alone system in the always-in context that was originally intended, it can be an extremely useful tool for discretionary traders who can turn to the Parabolic for trailing stop levels in trending markets. It is possible to initiate a position, take your first partial profit (if that is in your trading plan), and then use the Parabolic's levels as trailing stops. When the stop level is hit, exit the position but do not flip. The usual caveat applies: it is a mistake to use any trading tool that you do not completely understand. If you are going to use the Parabolic, do whatever you need to internalize its calculations. If calculating it by hand or in a spreadsheet helps,



**FIGURE 8.2** The Parabolic System Applied to Oat Futures

do so. I would highly recommend some kind of test environment where you can apply it to artificial data series you create (see Chapter 7) so that you can see how it reacts to every imaginable market situation.

A similar idea is found in Chuck LeBeau's *chandelier stop*, which basically hangs a stop a fixed number of ATRs from the extreme point of a trend, creating a stop level that is conceptually similar to the Parabolic without the acceleration factor. One of the problems with using the Parabolic on a strict, systematic basis is that the acceleration factor is constantly moving the stop closer to the market, even when there is no trend at all. While this is desirable behavior in some contexts, it also results in multiple flips from long to short while the market is chopping sideways. The chandelier exit usually gives the trade more room, which, though it may result in larger losses, will also allow you to stay in trades at the beginning of trends. Conversely, in mature trends the Parabolic will usually tighten stops dramatically compared to the chandelier stop, which may help to protect profits in open trades.

**Other Price Action/Market Structure Stops** It is also possible to use references to price action and market structure for trailing stop points. For instance, a simple plan might be to stop out of an uptrending market on the first down close, at the lowest low of three days ago, or on two consecutive downward closes. If you are going to explore these, also consider stops that limit your loss on any one day, perhaps stopping out a certain ATR multiple from the previous day's high, low, or closing values, and be certain that you understand the statistical tendencies supporting your stop plan. For instance, all other things being equal, stopping out after three consecutive downward closes in stocks would be a bad plan because the market is usually primed for a bounce at that point. Whatever you choose to do, it should be subjected to a battery of statistical tests if possible, and backtested by hand (so that you see each detail of each trade) on at least several hundred trades.

Any of these stops will work well in strongly trending markets, but there is an important point here—*anything* will work well on carefully chosen examples in strongly trending markets. If you do research and backtesting on trailing stop methodologies applied to strongly trending markets, you are preselecting the ideal environments for those stops, and they will all usually look fantastic. In actual trading, results will often fall short.

Another thing to consider is that it is possible to switch to these types of stops once you have used other techniques to enter and to manage the initial stages of a trade, but, at that point, we need to ask if these stops really add anything at all. The answer will be different for different traders at different stages of their development. My experience is that good discretionary traders will outperform any rule-based trailing stop methodology over a large set of trades. There will be exceptions, but discretionary traders will know when to stop out of trades before the rule-based level is reached, or will also know that sometimes they should let the trailing stop's level break without actually exiting the trade. Some discretionary traders will use a tool such as the Parabolic as a reference, incorporating it into the trade management process in various ways.

## ACTIVE MANAGEMENT

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Many trading systems are designed with fixed profit targets and loss limits that are entered at the time of the trade and not modified until one is hit and the other is canceled, and others use various combinations of dynamic levels calculated from tools like the Parabolic SAR. These are certainly valid approaches to trade management, but most discretionary traders will gravitate toward a more active style that allows them to make decisions while the trade is underway. This is, in fact, one of the main reasons for being a discretionary trader, but it raises some questions. First, are we adding value through this interaction? Psychological studies have shown that people performing a task with a random reward falsely attribute more of their results to their skill if they have more chances to interact with the process. The designers of slot machines and rub-off lottery tickets know this very well, but could the same thing apply to trading? Could traders also be vulnerable to this error? Could they develop a false sense of their ability if they can change indicator settings, look at different markets, and make many small adjustments to their trades?

The second important issue to consider is that decision making under pressure is difficult, and everyone is vulnerable to making mistakes. Even experienced traders struggle under the pressure of real-time position management; for the new trader, the task is almost impossible. The extreme highs and lows in any market are driven by the emotions of market participants—the last buyer finally dumps his position at the lows, or the last, stubborn short gives up and covers in desperation right at the highs. This last buyer or last seller phenomenon is one of the most important psychological drivers of price at extremes; one reason people trade automated or fixed systems is to avoid the possibility of participating in those errors. Anyone who has traded for even a short period of time invariably marvels at how many times their on-the-fly execution decisions were made at the worst possible point in the market. There is no possible way to completely avoid these kinds of mistakes, but, if you decide to adjust and actively manage positions, having a clear plan will reduce your vulnerability to making emotional mistakes under pressure.

### Choices: Enter All at Once or Scale In?

Once you have determined the size to trade, you have the choice of entering the position all at once or in several pieces. There are times when that choice is constrained by market conditions or the type of trade setup. For instance, an order may be so large or the market so thin that it would be impossible to enter the whole position at one time. There are also kinds of trade entries—for instance, *scaling in* in anticipation of mean reversion—that may require multiple entries to be effective. The decision to scale in or enter all at once will depend as much on the type of trade signal as on the trader's inclination. There are many cases where it may make sense to buy into a decline or to short into a rally in a series of small trades, but there it is important to monitor your risk closely. It is very easy

to scale into a trade, to keep scaling in, and to end up with more size and a larger loss than you had originally planned. This is unacceptable and dangerous. These larger-than-expected losses will add up, with the possibility of a catastrophic loss looming around the corner as well. (Remember, the fact that you can scale into the trade in the first place means that the market is moving the *wrong way*.) First, define an absolute dollar amount you want to risk on the trade. Next, define the ultimate drop-dead stop in the market past which you will not hold the trade, and then carefully track your size and average price so that you know, at all times, what the impact of a loss at that ultimate stop level will be.

### Taking Partial Profits

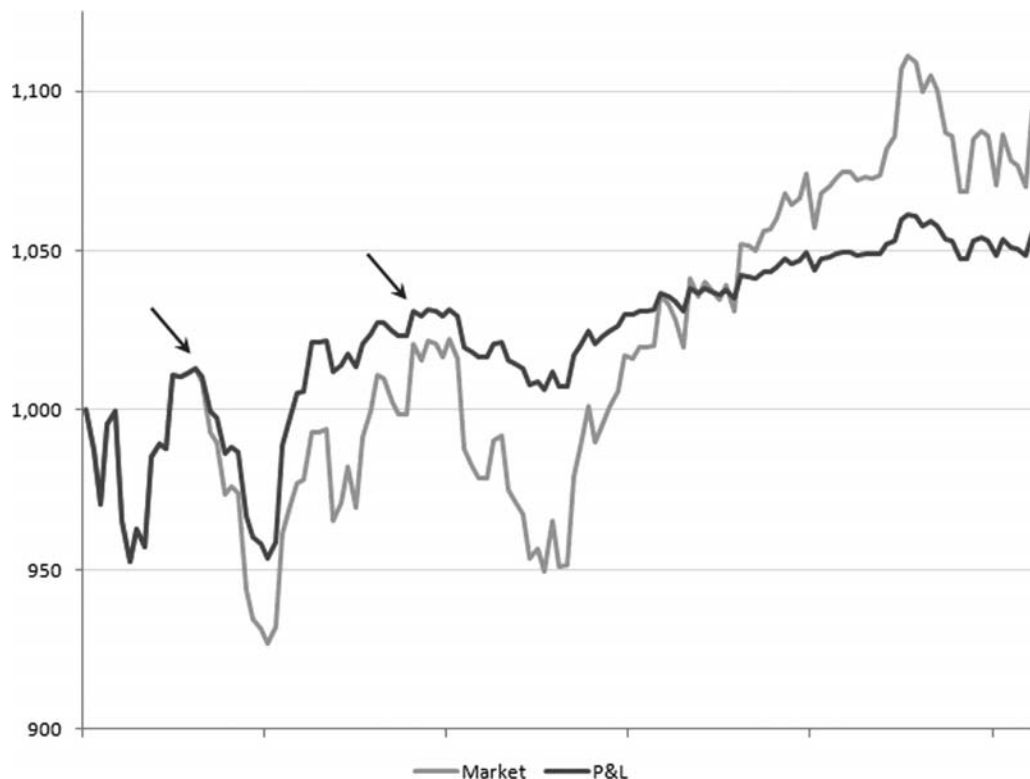
Taking partial profits as the trade moves in your favor can make good sense; you are paying yourself as the market proves your trade idea correct. There is an unavoidable trade-off: taking partial profits will mean that you do not have your full size on for the trades that become big winners, so the trade-off is consistency at the expense of larger, but less frequent, wins. In the context of a well-planned trading program, either approach is viable. Some traders feel the need for activity, and will start exiting part of their positions without any plan soon after entry. If this is not well thought out, what usually happens is that these early exits simply remove some of the edge from winning trades, as the natural psychological tendency will be to lock in some profits, however small, on winners. In addition, short-term traders on all time frames are especially vulnerable to making executions in the noise level of the market. While they may believe that they are contributing something of value to the trade, this is often not true. Make sure that your partial profits are actually adding to the bottom line.

### Taking Partial Losses

Another possibility is to take partial losses as the trade moves against you to reduce the size of the final loss if the trade hits your stop point. There are a few things to consider here; the same concern with making executions in the noise level of the market applies. If you are entering a \$50.00 stock with an ATR of \$2.00 on the daily chart, making decisions when you are up or down \$0.25 on the trade probably does not make sense. More importantly, partial exits on either the profit or loss side of the entry will have the effect of anchoring the profit and loss (P&L) to that side. In the case of partial profits, this is what we are trying to accomplish, but taking partial losses may work against us.

One useful tool for visualizing this is to imagine two lines moving in time: one is the market you are trading, and the second is your P&L. If you have your full size on, the P&L line will track the market exactly; if you have half size on, then the line will move half as fast (change half as much) as the market, either up or down, and this pattern continues for different amounts of leverage. Imagine entering a full-size position, and then the market swings down to a loss, where you exit part of your position. The market



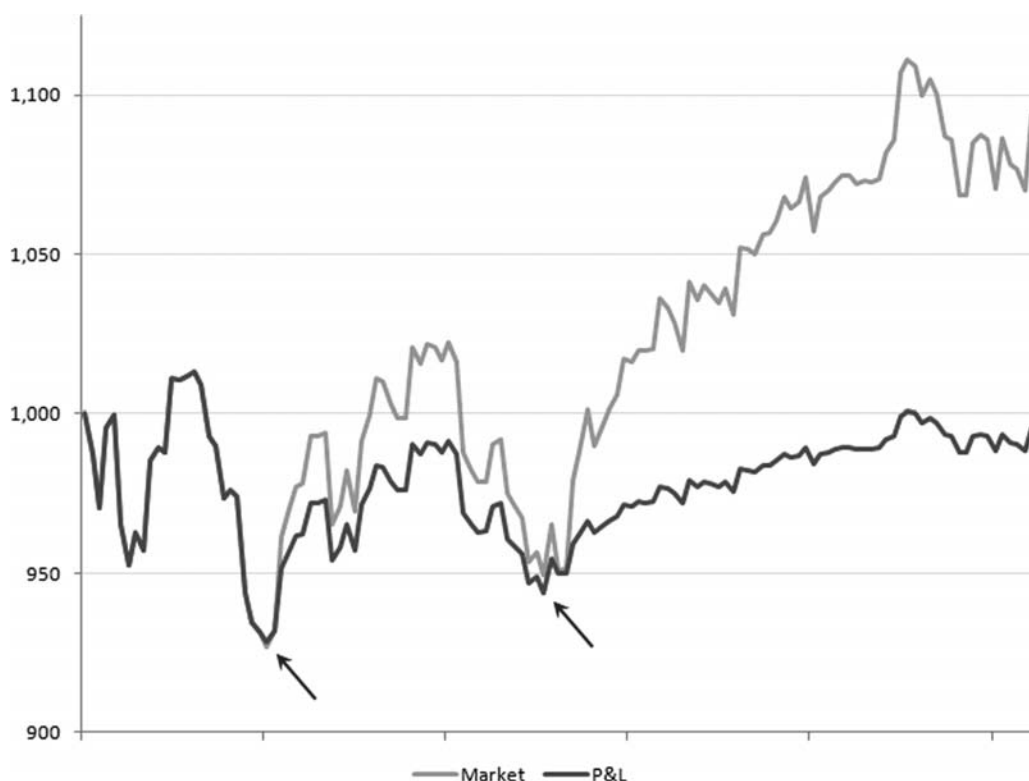


**FIGURE 8.3** Partial Exits (Marked with Arrows) at Two Optimal Points Early in the Trade

turns back up, but your P&L line now lags the market because you sold some of your position at a small loss, in effect locking in that loss.

Figures 8.3 and 8.4 show two scenarios of a theoretical P&L with partial exits compared to the underlying market they are tracking. Both traders entered at the left edge of the chart with full trading size, but took partial exits of one-third of their initial position at two points early in the trade. The trader in Figure 8.3 obviously had a working crystal ball, because he knew to take his exits at the high points of the early swings. Conversely, the trader in Figure 8.4 made the worst possible decisions, and took off one-third of his position at the exact low points. The market eventually went higher, and both traders should have profited, but notice that partial profits taken on either side of the line that defines the entry price will tend to anchor the P&L on that side of the line. Locking in losses makes it very difficult to ever recover those losses. If you are ever considering taking partial exits at a loss, it may make sense to simply exit the entire position at a small loss rather than deleveraging your P&L in the loss space. Use this tool to visualize various scenarios and their impact on your bottom line, and carefully consider the impact of these partial exits at a loss.





**FIGURE 8.4** The Same Market, with Partial Exits at the Two Worst Points Early in the Trade

### Adding to Existing Trades

There are a few different schools of thought on whether to add to existing trades. Be sure to separate these additions from the case of a normal, planned trade entry done in pieces. The normal scaling-in entry (if that is in your trading plan) is usually done as the trade moves against you, and with the idea of accumulating a maximum intended position size against a clear risk level. These additions are different from additions that come *after* the initial entry has already reached its maximum size, and they may or may not come after partial profits have been taken. In some cases, you may add to a full-size trade and so have on two or more times your expected exposure. In other cases, you may book partial profits (or losses) on an existing trade, and then add back only enough size to get back to your initial trading size and risk. There are too many possibilities here to consider every possible scenario, but let's consider some arguments for and against a few scenarios.

**Never Add to an Existing Trade** Some trading systems are designed to simply enter on a set of criteria and exit on another set of criteria. In these systems, all we are

playing for is the slight statistical edge that may come from the rule set, and some of these conditions have fairly limited influence with respect to both time (i.e., they are good for only a few bars) and price (small price movements). A trader working with a system like this, or with a discretionary approach that is similar, will find that adding to existing trades is usually a mistake because the statistical edge identified by the condition is usually strongest right at the entry point. Once again, note that this is not the same thing as an entry that requires scaling in to reach full size as the market moves against the entry price.

**Add Back Only After Partial Exits** As another example, consider a trader who gets into a trade, takes half of it off at a 1X profit (where X is the initial dollar amount risked on the trade) and then finds the trade back at the entry price. This trader can add the half she already exited back to the trade; a stop-out at the initial stop point will now be only a half-sized loss because of the offsetting win on half the initial position. A trader establishing a position in an accumulation area could go through a process of selling part of her exposure at the top of the range and bidding to buy it back at the bottom, perhaps several times before the eventual breakout of the range. In effect, this trader is building up a profit cushion as the market oscillates in the range before the breakout. If she has misread the market, or if the trade doesn't work for any reason, her ultimate loss will be cushioned or even eliminated by the profits made in the range. There is always a trade-off, and in this specific scenario, if the market does eventually break out of the top of the range, the trader will have on less than full size because she was selling some of the position at the top of the range. This trader will be penalized on the clean, easy trade that breaks immediately out of the top of the range with no oscillations, but these trades are the exception rather than the rule.

Another case to consider is where a trader gets lucky and catches a well-trending market that extends for many trend legs after the entry. Though this is not common, there are opportunities to reap truly outsized profits from extended trends with the proper plan, so it is worth spending some time thinking about how to build positions in these trends while also managing the downside. One very good plan is to enter a full position and take partial profits at the appropriate targets. (For simplicity's sake, assume half the position is exited at a profit target.) Then, when another setup in the direction of the trend emerges, this entry is also taken on full size, so now the trader is holding a net position equal to 1.5 times the initial trading size. At the appropriate target for that trade (the second entry), half of that trade is exited, leaving a full-sized position, essentially for free, with locked-in profits. This can be repeated, trading the same size and gradually accumulating a larger, more or less risk-free position as the trend expands. Avoid the temptation to increase size on later entries—growing profits can lead to overconfidence, which is especially dangerous near the end of trends, where volatility can dramatically expand.

**Add Without Taking Partial Exits** The classic *pyramiding plans* fall under this category; accumulated profits from one tier are used to fund the next tier. *Reverse*

*pyramid* plans, for instance starting with one unit, next buying two, then four, eight, 16, and so on, are used in a lot of marketing literature for trading methods and systems; if you want to turn \$2,000 into \$2,000,000 in one, glorious trade, this is pretty much the only way to do it. It is possible to find historical examples of trends and show that, if you had pyramided aggressively and perfectly, you could have eventually ended up essentially cornering the market in some commodity or owning most of the float in a stock, even starting with a very small initial investment.

By this point in this book, we probably do not need to point out the other side, which is that your probability of success is vanishingly small. The problem with reverse pyramid plans is that the position is top-heavy and becomes increasingly so as more contracts are added. When you start with one unit and end up adding 20 at higher prices, it takes only a very small dip in the market to completely wipe out all accumulated profits since the average price on the position is so high. As you also know, extended trends tend to become more volatile, so reverse pyramid plans usually end up blowing out accounts or, in the case of leveraged accounts, even going significantly negative.

In the exceedingly unlikely chance that you do get lucky with a reverse pyramid plan, there is something else to consider—you would be totally unprepared for and unable to deal with the psychological pressures of trading the size dictated by the pyramid. Imagine you are a one-unit trader with a \$20,000 trading account, and you're comfortable risking maybe \$500 per trade. If you happen to catch a good trade and pyramid up to 50 units, your average daily swings could be hundreds of thousands of dollars. How likely are you to make good decisions under that kind of pressure? These reverse pyramid strategies have payoff structures very close to a lottery ticket, which is probably the right way to think of them—just imagine you are buying a lottery ticket equal to your full account value. They are not acceptable, professional trading plans.

Pyramiding should not be dismissed out of hand, however; there is another way. *Proper pyramids*, those that have the largest size at the beginning of the campaign, can be valuable in some situations. In a proper pyramid, the trader adds successively smaller units as the trend progresses. (For instance, you might start with 20 units, and add 16, and next add 12.) A pyramid built this way keeps its average price closer to the base, closer to the first units; it is not top-heavy so traders can weather volatility near the end of the trend better. There are many successful trend followers who use some variation of this plan, but it can cause some problems in conjunction with certain entry techniques and other trade management plans. In the worst case, it basically adds another random element to the risk and trade sizing equation. These additions almost always result in a more volatile bottom line, so make sure that the additional upside compensates on a risk-adjusted basis.

If you do decide to pyramid, size up, or aggressively add to trades when you know you are right, make sure you are actually adding value to your overall P&L. These are important questions that should be considered. You have to ask whether it makes sense to add to trades in the first place. Many traders do not consider this question in building their trading plan, but make a hasty decision the first time they are faced with an

extended and very profitable trade. Without a good plan, that decision is likely to completely destroy the profit in that particular trade, and perhaps to even do more damage to the trading account. If you do decide that adding makes sense, then you need to consider exactly how to do it. There are few absolutes in trading, but it is very difficult to imagine a reverse pyramid plan that actually makes sense. With that possibility off the table, there are several other variations of adding size to trades that can be explored. From a practical trade management standpoint, the last thing to consider is whether the additions will be considered completely new trades so that each individual trade preserves its own entry and management rules, or you choose to think of them as one combined position with an average price equal to the cost basis of the group. The answers to these questions will depend on your trading style and your chosen approach to the markets.

### Time Stops

Few technical traders get into a position with the plan of the market simply staying at their entry price. (The obvious exception would be option spreads or other derivatives that are short volatility.) The choice to actually enter a trade is usually made because we believe that an imbalance exists in the market and that this imbalance should cause a price movement within a short time period. If this movement does not happen quickly, it often suggests that much of the edge has gone out of the trade, and we are basically flipping a coin. This is why time stops can make sense. There are many variations of these rules, but they basically say that if a trade does not hit some kind of predetermined profit limit within a certain time, the trade will be exited after that time window expires. Time stops will also cut out some winning trades. This is unavoidable, but, even with the loss of some winners, the end result could still be a net gain to the bottom line. In addition, many traders find that their best trades work right away; this is a reflection of certain setups in certain markets and may not generalize to all situations. For these traders, even if a trade does end up being profitable after an extended flat period at the beginning, the resulting trade is often less energetic and less profitable than the ones that worked immediately, so a time stop will still make sense.

There are several choices for how to actually execute time stops. The obvious choice is to simply exit at the market once the time window expires. Another choice that is not often considered is to tighten the stop very close to current market prices, moving it closer as time goes on in a similar fashion to the movement of the Parabolic SAR's stop levels. This greatly reduces the open risk in the trade, though it does leave the position vulnerable to a large loss if an unexpected event causes an overnight gap. Furthermore, after reducing the risk, this technique leaves the possibility of gains intact if the market does move in the intended direction. This is probably not a technique for the newer trader who has not learned to deal fully with the emotions of trading and who would probably be better off with a simpler rule set. For the more advanced trader, this technique can offer a very attractive compromise between limiting risk in flat trades and still preserving the opportunity to profit from trades that take a while to develop. This is one of the most underutilized techniques available to the self-directed discretionary trader.

## Tightening Stops

At first glance, it would seem that tightening stops is a simple and effective way to reduce risk in existing trades. However, the risk/reward/probability matrix always applies in all situations and to every action the trader makes. Inevitably, tightening stops reduces the probability of the trade working out, as a tighter stop is always more likely to be hit than a wider stop. Make sure that you are moving stops in response to developing market structure and to the shifting probabilities of the scenario, rather than in response to your own emotions or desires to avoid losses.

There is a trade-off between staying in a trade for the bigger move, which requires looser stops, and being unwilling to give back much profit with tighter stops. Traders using very loose stops (far from current market prices) have a much higher probability of staying in the trade and not getting shaken out by noise, but they must also be willing to give back large percentages of open profits. We often say “weak-hand longs” or “weak shorts” in a pejorative sense, but there are times when a smart trader will actively *choose* to be the weak hand. There are times when we want to be taken out of a trade by a very small adverse move, for instance when taking profits in an overextended trend or a parabolic blow-off.

**Trade Reaches a Risk Multiple Target** For many technical traders, once the trade has made a significant move into the profit zone, it rarely makes sense to take a full-sized loss on the trade. Traders can use their initial risk level as a reference point, projected at an equivalent distance on the other side of the entry, to define a significant move for the trade. For instance, assume you enter a long position in a \$50.00 market with a \$2.50 stop at \$47.50. When the market reaches \$52.50, it may make sense to tighten the stop to just under your entry point or even higher. If the initial stop was set correctly for the volatility level of the market, once the trade moves an equivalent distance in the other direction, the trade is working. At that point, the pattern is playing out as expected, and a failure from that level usually suggests a larger-scale failure—there is no need to take a full-sized loss on a trade in this situation.

Another scenario applies to traders who take profits at specific multiples of that initial risk (e.g., taking profits at 2X). Once this profit target is hit, it usually makes sense to tighten the stop on the remainder of the trade to the entry price, essentially working a breakeven stop on the rest of the trade. The same logic applies here: the trade worked in that it was able to reach the first profit target, so it makes sense to eliminate the open risk on the trade. Move the stop to a point where a stop-out will, at worst, result in a breakeven trade, as the loss on the open portion will be offset by the already locked-in gains on the closed portion. Be clear: this solution may not be the right fit for every trading style, but short-term swing traders will find that a plan like this will significantly reduce the volatility of their returns.

**Sharp Momentum Develops** Sometimes a trend will accelerate into a parabolic run with very sharp momentum. This is a somewhat rare but glorious outcome, and one that



**FIGURE 8.5** A Stop Under the Previous Day's Low Is Appropriate in a Parabolic, Runaway Trend

often justifies working very tight stops. Figure 8.5 shows a daily chart of Silver futures, which, after an already extended uptrend, broke into a parabolic expansion. A trader holding a long position in a runaway trend like this could have worked a stop each day below the previous day's lows. In this example, assume that the trade was entered somewhere around A on the chart; if you were working a stop under the previous day's low, it would not have been hit until the point marked C, the day after the extreme high of the run-up. This is a very aggressive stop technique that crosses the line into a profit-taking exit. Basically you are asking for the market to take you out of the position with a slight downtick so you can book the profit, but you are also leaving yourself open to continued upside in the unlikely event the market extends further. You *want* your stop to be hit in this case. Parabolic trends are a special example because they often carry very high risk of sharp reversals from climax points. Traders who are fortunate enough to be holding heavy exposure into such a move can become emotional and excited as they extrapolate the move into infinity, and this time of extreme emotion often results in very poor decisions. Use tight stops on at least part of the position to remove the emotional component from the decision process in parabolic trends.

The parabolic trend is an unusual and dramatic example, but even normal trends can often justify fairly tight stops, depending on the trader's plan and personality. Swing traders, who are clearly playing for only one swing with minimal giveback, will work much tighter stops than traders who plan to hold for the longer trend, if it should develop. Price action in trends is more directional and more predictable than price action in ranges, so we can get away with stops much closer to the market if the goal is to protect open profits. For example, in an uptrend, a tight stop could be trailed under the highest pivot low of the trend. Slightly wider stops could go under the second-highest pivot low, probably working both of these stops on a close-only basis to avoid the possibility of selling into a fake dropout. It is also worth considering that if you are stopped out by an intraday move that reverses on close, it may make sense to reenter the position with a stop under the new extreme.

**It Is Difficult to Tighten Stops Against a Range** If it is easy to work tight stops in trends, it is much more difficult to work tight stops in consolidation areas. These areas tend to be much more random, and one of the dominant features of these structures is that they have large spikes outside the range. Volume and liquidity tend to be lower in these areas, reflecting the generally reduced trading interest, so medium-sized orders can have a very large impact on prices. Be aware that tightening stops on a trade in consolidation is usually effectively a time stop and a conscious decision to work toward being taken out of the trade. This is often justified, but if it is not what you are trying to accomplish, it may make sense to leave stops close to the initial risk point while the market is ranging. Once momentum and a new trend develop in the trade's favor, the stop can be significantly tightened in the new trending environment.

## Widening Stops

The rules for this technique can be simplified to one word: don't. Most traders will be better off if they have a simple rule that says they will never move a stop in the direction of risk. In other words, never move a stop down in a long position or higher in a short position. For new trades, the reason is obvious: A trade is initiated against a fixed stop, and position size is calculated based on a loss at that level. If the stop is moved to allow for additional risk, then a larger than expected loss could result. Why even make rules for position sizing, initial risk, and initial stop placement if you do not intend to follow them?

I actually have a trading rule that says a stop can never be moved in the direction of risk, but there are two precisely defined exceptions to that rule. In both cases, the common factor is that the stop must remain inside the initial  $1\times$  risk parameter; this is a hard limit established at the time of trade entry that can never be violated. The exceptions are:

- When the decision to tighten the stop was clearly an error. In these cases I will move the stop back out, but not further than the day on which the error was made.



- When emerging market structure suggests the need for a slightly wider stop. Be careful because it is easy to justify moving the stop further and further away from the market as the market edges toward the stop. In my opinion, newer traders should never do this, because they do not have the experience to separate their emotional reactions from legitimate market feel.

There is actually a third, very rare case that justifies a larger stop. Imagine that you are scaling into a trade in a large move, and something happens that suggests the volatility may be even higher than expected. For instance, perhaps you are buying into a decline and then some news hits the market that causes ranges to expand. In this case, assuming you have on part of the intended position size, it may make sense to not complete your buying program, but to move the stop further away from the market. The total risk on the trade is equal to or less than the original intended risk, but the position size will be much smaller against a further stop. This is not actually an increase of risk in any way, as the total bottom line for the trade will be the risk that was initially allocated.

## Managing Gaps Beyond Stops

Though many markets are moving toward round-the-clock trading, there are still cases where a market will gap open beyond a stop level. For instance, overnight news could cause a stock to open much lower, gapping under a stop on a long position. In a more dramatic example, a natural catastrophe could trigger a large shift in markets, causing many positions to gap beyond stop levels. In these cases, the initial losses on the open may be many times the intended risk on the trade. No doubt this event is a disaster, but the damage can get much worse. It is important to have a good plan that accounts for these possibilities, so that you are not put in the position of having to make emotional decisions on the fly.

There are two important factors to consider here. Understand your chosen markets' tendencies around the open. For instance, most gaps in equities are reversed; if a stock opens down, there is a good tendency for it to trade up into the gap. Second, consider the markets' tendencies in trading *off* the open print. The high or low of the day tends to be set in early trading. So, if you are holding a long position that gaps down and immediately starts trading up, it may make sense to set a new stop under the day's low to give the market a chance at recovery. However, if the market opens down and immediately presses lower, or breaks lower out of an opening range, there is a good chance that it could trend down all day. Long positions should be dumped immediately in the second scenario.

If you trade long enough, these gaps through stops *will* happen, and they will result in some stunning losses. Fortunately, you will be on the right side of some of these surprise events as well, but it is important to realize that your ability to make good decisions may be compromised in the face of very large, volatile market movement. In these cases, your best hope is to have a plan that already considered the possibilities and to follow that plan with perfect discipline.



## PORTFOLIO CONSIDERATIONS

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Active traders do not usually think in terms of building portfolios, but the reality is that any set of assets held at the same time in an account will behave as a portfolio. Much of the math and many of the assumptions of *modern portfolio theory (MPT)* are flawed, but investors and managers who are used to thinking in terms of portfolios usually internalize some sense of the risks and peculiar behaviors of portfolios. (MPT was created in 1952, so calling it modern is a bit of a misnomer.) Active traders may not have the same intuition, but these are important factors that can substantially alter the total risk a trader is exposed to. Anytime multiple positions are held, even for a few minutes, some of these portfolio considerations apply.

### Correlated Positions

That correlated positions will tend to move together is obvious, but many people are not aware of how unstable correlations can be. Correlations between diverse and seemingly unrelated markets all tend to move toward 1.0 in times of financial stress or crisis. The traditional defense to correlation is diversification—holding many different assets with varying degrees of correlation so that losses in one asset class over a time period are cushioned by gains in another. However, long-term investors have been taught this important lesson time and time again: the supposed benefits of diversification are not there when they are most needed. An investor holding long equities, U.S. dollars, bonds, gold, crude oil, cocoa, and wheat would normally expect that some pieces of that portfolio are uncorrelated and some are usually negatively correlated. If the markets go into crisis mode, there will be periods when every asset in that portfolio loses value at the same time. In addition, correlations shift over time, both as a function of random noise and due to longer-term structural influences. *Changes* in correlations present a serious challenge to managers and investors who would build portfolios designed to weather the rough times; robust portfolio construction is a lot harder than many people think.

Short-term traders often tend to ignore correlations, assuming that whatever positions they have on are driven by price action dynamics that are unique to each of those markets. This is often true, but, when it is not, the losses can be catastrophic. Stock traders, in particular, do not have as many positions as they think. If you are an equity trader, consider the sum of the open risks in all of your positions and ask if you would take equivalent risk in a large single position in an index product. The answer, in almost all cases, will be no, but in reality, this is what you are doing. It's very simple: if the market makes a big move, your positions are going to move together. You will win or lose on the long and short sides of your book as two large blocks, regardless of what diversification you thought you had built into the equation.

For futures and forex traders, the situation is usually a little less complicated, though traders need to be aware of shifting correlations and unexpected influences in shocks.

For instance, a futures trader might expect that a portfolio of Gold futures, Sugar futures, and Wheat futures would be fairly uncorrelated, but there will be periods of time when those assets are more correlated than history would suggest. Monitor these shifting correlations from both a quantitative and a commonsense, qualitative perspective. Be clear on this: it is the *shifts* in the correlations that usually present the most danger to portfolios. Forex traders need to be aware of the obvious portfolio effects of their positions. A book that is long AUDUSD, JPYUSD, and EURUSD is very heavy on the short USD position, which may or may not be desired. The first step in wrestling with these problems is simply to become aware of them; most short-term traders do not invest significant time and energy thinking about these issues.

One practical rule set is equity-centric, and another applies to all asset classes. These are not heavily optimized rules, but they are a robust commonsense approach to managing correlated risk in an actively traded book. These are very similar to the rules I use in my own trading; you may prefer to use slightly different rules, but you *must* have rules like this in place before you begin trading.

- For equity traders, define  $X$ , the percentage of the portfolio to be risked on any one trade. Risk no more than  $2X$  to  $3X$  in highly correlated positions, for instance in multiple stocks in the same sector. Be aware that the correlations between all of your names, even across cyclical and defensive groups, are likely to be much higher than you expect. Furthermore, do not expect that long/short sides of your book will offset each other in a decline. Many technical traders find that their longs get hit in a sell-off, and the shorts hold steady because of the nature of the specific technical patterns being traded. Sometimes one side of the book is reduced by stop orders at the worst point, and the account suffers when the market turns. Plan for the worst.
- Risk no more than  $1.5X$  to  $2X$  in highly correlated groups (precious metals, petroleum products, grains, and so on for futures traders) or in currencies that share regional or economic influences. Assume that something bad could happen to the entire group and you could take a loss on that part of your book as the positions move in unison. Also be aware that the diversification effect you expect between noncorrelated parts of your book may not be there.
- The common thread here is to plan for the worst so that individual positions do not add up to an unacceptable risk to the overall portfolio.

## Maximum Portfolio Risk

If you trade long enough, everything that can happen eventually will happen. It is also important to have a rule that limits the total amount of the damage that can be done to your account on any one day, assuming that every long and every short position hit their designated loss limit for that day. In reality, this may happen once every 5 or 10 years, but the psychological and financial impact of taking a 50 percent hit in a single day is irrecoverable. One way to deal with this kind of tail risk is simply to limit the total portfolio loss to a specific number, and, if that number is hit, exit all positions. This

value could be an  $x$  multiple, as in total portfolio risk is  $5x$ , or it can simply be a fixed barrier past which you do not want to lose. As you consider this number, think about the asymmetry of the gains required to recover a large loss. Too often, traders simply focus on the upside without really being aware of the risks they are assuming or the potential long-term effects of large losses. Manage the risk first and foremost, and the upside will take care of itself.

## PRACTICAL ISSUES

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This chapter has presented many ideas, but I hope a clear picture has emerged: There are many possibilities in how to manage trades. Ideas have to be adapted to your own personality and trading system, and not everything works. You cannot simply pick and choose random ideas, put them together, and expect good results; you must do the hard analytical work and be sure that you are crafting a rule set that really has an edge. Finding patterns to get into the market is only one small part of the picture; some traders would argue that it is one of the least important pieces. Once that is accomplished, trading size, risk, initial stop placement, and how to manage the evolving trade become very important—answers to all of these questions must be worked out in advance. In addition, the market is dynamic and will throw many surprises at traders. Field Marshal Helmuth von Moltke's statement that "no battle plan survives first contact with the enemy" is as applicable in trading as in war; experienced traders learn how to adapt and to make decisions within the framework of their rules as the trade evolves.

To make these ideas easier to apply, we need to connect the dots and consider some of the practical issues that traders will face. Many of the ideas in this section are directed to the trader holding overnight positions, but can be applied, with little modification, to traders who hold only intraday positions. Portfolio managers building portfolios and managing risk in the traditional models may also find some ideas that they can apply in their investment process as well. Newer traders should also be wary of trying to do too much at once and of trying to trade too many markets. It is far better to have on one or two positions and to know everything about those markets than to get lost trying to manage positions in eight different markets.

The work of monitoring and reviewing your positions must be done every day without fail. The less you want to do it, the more important it is. Traders usually will find excuses to skip reviews on days they have incurred losses, or after a string of losing days, but these are precisely the points at which you must do even more work. Of course, you may need to stop the bleeding in your account, but these moments are also exceptional learning opportunities. It is possible that you are simply suffering at the hand of a random market, but it is also possible that your behavior and your decisions have been suboptimal. Asking the hard questions is always painful, but the alternative is to keep losing. Every moment in the market is a learning opportunity; make sure you are doing the work to benefit from those opportunities.